

**What Is Claimed Is:**

1. A simulation system comprising:

a simulation reference simulator (30) adapted to receive an SRML simulation model (32) including a simulation item (20), wherein said simulation reference simulator (30) comprises:

5 an item manager (44) for loading properties of each item (20) of the simulation model (32); and

an event manager (46) for processing the simulation model (32).

2. The simulation system of claim 1 comprising a host (36) in operative communication with said simulation reference simulator (30) and  
10 including said SRML simulation model (32).

3. The simulation system of claim 1 wherein said simulation reference simulator (30) comprises a random number generator (48) in operative communication with said item manager (44) and event manager (46) for generating random numbers.

15 4. The simulation system of claim 1 wherein said simulation reference simulator (30) comprises means for processing mathematical and statistical functions (52), said means in operative communication with said item manager (44) and event manager (46) for generating random numbers.

20 5. The simulation system of claim 1 wherein said item manager (44) is in operative communication with an XML parser (54) for building a validated Document Object Model (DOM) tree in the process of loading items (20) of the simulation model (32).

6. The simulation system of claim 2 wherein said host comprises a general purpose digital computer including memory storing a host program.

7. The simulation system of claim 1 comprising means for providing an output (34) indicative of the simulation process.

5 8. The simulation system of claim 1 wherein said event manager (46) is adapted to process the simulation model (32) by communicating process commands comprising SendEvent, PostEvent, ScheduleEvent, and BroadcastEvent.

9. A method of conducting simulations comprising:  
10 defining a simulation model (32) with Simulation Reference Markup Language (SRML);  
communicating said model (32) to a simulation reference simulator (30);  
executing said model (32) with said simulation reference simulator (30);  
and  
15 providing an output (34) of modeled events.

10. The method of claim 9 wherein the step of defining a simulation model (32) includes defining a plurality of items (20) wherein at least one item includes an ItemID and an ItemClass property.

11. The method of claim 10 wherein the step of defining a  
20 simulation model (32) includes inputting said items (20) using a host environment (36).

12. The method of claim 10 wherein the step of communicating said model (32) with said simulation reference simulator (30) includes the step of loading each item (20) of said simulation model (32).

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13. The method of claim 12 wherein the step of loading includes communicating items with an item manager (44) to an XML parser (54) to build a Document Object Model (DOM) tree for said item.

14. The method of claim 10 wherein at least one item includes an  
5 Event property.

15. The method of claim 14 wherein the step of executing said model (32) with said simulation reference simulator (30) includes the step of processing each Event property with an event manager (46).

16. The method of claim 9 wherein the step of executing said model  
10 (32) with said simulation reference simulator (30) includes the step of generating random numbers with a random number generator (48).

17. A simulation model stored in a computer-readable medium for conducting simulations comprising:

a plurality of items wherein each Item (20) represents an article, process  
15 or system and includes a Property, said Property including an ItemClass (26) for associating items.

18. The simulation model of claim 17 wherein each Item includes an ItemID defining a script object.

19. The simulation model of claim 17 wherein said Property includes  
20 Links to other items.

20. The simulation model of claim 17 wherein said Property includes a Location identifier of the Item.

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22. A computer system for performing simulations comprising:  
means for providing a simulation model (32);  
means for processing the simulation model (32); and  
means for outputting the process of the simulation model.